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**METHOD AND DEVICE FOR MEASURING FLUCTUATIONS IN THE CROSS-  
SECTIONAL AREA OF HAIR IN A PRE-DETERMINED SCALP AREA  
BACKGROUND OF THE INVENTION**

**1. Field of the Invention.**

The present invention relates to a method and device for measuring fluctuations in the cross sectional area of a bundle of hair for the purpose of documenting the clinical course of medical hair loss disorders and the effectiveness of hair growth treatments and/or for the purpose of indirectly calculating the severity of balding disorders or efficacy of hair growth treatment as evidenced by a decrease or increase in hair population and/or hair shaft diameter.

**2. Description of the Related Art.**

Heretofore, a hair volume-measuring device used for measure of hair damage was disclosed in the Kabacoff et al. U.S. Patent No. 4,665,741.

Hair shedding is a condition characterized by loss of hairs of normal-sized diameters. It is one of the two major categories of hair loss. Shedding is diffusely distributed over the scalp and may be the sign of several medical abnormalities and toxicities. It may physiologically follow high fever, cessation of birth control pills, or childbirth. Shedding is characterized by the appearance of skin on the scalp where hair was once present. Shedding may be quantified by measuring the density of hairs present in an area of one-centimeter square of scalp. Hair density usually is measured by closely cutting the scalp hair (about 2mm long in an area 5mm X 5mm) and then counting the remaining cut hairs present on the scalp and multiplying that value times 4. The hair density of normal individuals in the absence of shedding ranges between 120 to 200 hairs per sq cm of scalp.

Hair thinning is a condition characterized by the gradual miniaturization of individual scalp hairs. It is the second major category of hair loss. The appearance of hair loss is the result of decreasing diameters resulting in the eventual absence of hairs. Thinning (like shedding) also is characterized by the appearance of skin on the scalp where hair was once present. Thinning affects an estimated 75% of men and 10% of women. Unlike shedding, it is not diffuse in its distribution over the entire scalp surface, but almost always appears in a pattern, with hair loss on the top of the scalp. Thinning characteristically spares the posterior and sides of the lower scalp, creating a familiar horse-shaped fringe that persists in spite of the most advanced cases.

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